

What is claimed is:

- 806  
A1  
508  
A2  
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1. A tribonectin comprising at least one O-linked lubricating moiety.
  2. The tribonectin of claim 1, wherein said moiety is a  $\beta(1-3)$ Gal-GalNAc moiety.
  3. The tribonectin of claim 1, wherein said tribonectin comprises amino acids 1 to 24 and 200 to 1404 of SEQ ID NO:1, wherein said tribonectin lacks amino acids 25-199 of SEQ ID NO:1.
  4. The tribonectin of claim 1, wherein said tribonectin comprises amino acids 1 to 156 and 200 to 1404 of SEQ ID NO:1, wherein said tribonectin lacks amino acids 157-199 of SEQ ID NO:1.
  5. The tribonectin of claim 1, wherein said tribonectin comprises amino acids 1 to 106 of SEQ ID NO:1 and 200-1404 of SEQ ID NO:1, wherein said tribonectin lacks amino acids 107 to 199 of SEQ ID NO:1.
  6. The tribonectin of claim 1, wherein said tribonectin comprises amino acids 1 to 25 of SEQ ID NO:1, 67 to 106 of SEQ ID NO:1 and 200-to 1404 of SEQ ID NO:1 wherein said tribonectin lacks amino acids 26 to 66 of SEQ ID NO:1.
  7. A tribonectin comprising a polypeptide the amino acid sequence of which comprises at least one but less than 76 subunits, wherein
    - (a) each subunit comprises at least 7 amino acids; and
    - (b) the amino acid sequence of said subunit is at least 50% identical to SEQ ID NO:3, wherein a non-identical amino acid is a conservative amino acid substitution.
  8. The tribonectin of claim 7, wherein the amino acid sequence of said subunit is SEQ ID NO:3.
  9. The tribonectin of claim 7, wherein said tribonectin further comprises one or more repeats of the amino acid sequence of SEQ ID NO:4.
  10. The tribonectin of claim 1, wherein said tribonectin is characterized as reducing the coefficient of friction between bearing surfaces.
  11. The tribonectin of claim 1, wherein said tribonectin is characterized as reducing the coefficient of friction between bearing surfaces in vitro.
  12. The tribonectin of claim 1, wherein said tribonectin is characterized as reducing the coefficient of friction between bearing surfaces in vivo.
- Sub 25  
A3

sub A4  
13 The tribonectin of claim 1, wherein said tribonectin does not substantially increase the viscosity of a solution to which it is added.

14. The tribonectin of claim 7, wherein said tribonectin comprises an O-linked oligosaccharide.

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sub A5  
15. The tribonectin of claim 14, wherein said oligosaccharide is an N-acetylgalactosamine-galactose.

16. The tribonectin of claim 1, wherein at least 10% of said tribonectin is glycosylated.

17. The tribonectin of claim 1, wherein at least 40% of said tribonectin is glycosylated.

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18. The tribonectin of claim 1, wherein the molecular weight of said tribonectin is in the range of 200-280 kDa.

19. The tribonectin of claim 1, wherein said polypeptide comprises a fragment of megakaryocyte stimulating factor.

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20. The tribonectin of claim 1, wherein said polypeptide comprises an amino acid sequence that is at least 50% identical to the sequence of residues 200-1140, inclusive, of SEQ ID NO:1.

sub A6  
21. The tribonectin of claim 1, wherein said polypeptide comprises the amino acid sequence of residues 200-1140, inclusive, of SEQ ID NO:1.

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22. The tribonectin of claim 1, wherein said polypeptide comprises an amino acid sequence that is at least 50% identical to the sequence of residues 200-1167, inclusive, of SEQ ID NO:1.

sub A7  
23. The tribonectin of claim 1, wherein said polypeptide comprises the amino acid sequence of residues 200-1167, inclusive, of SEQ ID NO:1.

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24. The tribonectin of claim 1, wherein said polypeptide comprises an amino acid sequence that is at least 50% identical to the sequence of residues 200-1212, inclusive, of SEQ ID NO:1.

sub A8  
25. The tribonectin of claim 1, wherein said polypeptide comprises the amino acid sequence of residues 200-1212, inclusive, of SEQ ID NO:1.

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26. The tribonectin of claim 1, wherein said polypeptide comprises an amino acid sequence that is at least 50% identical to the sequence of residues 200-1263, inclusive, of SEQ ID NO:1.

27. The tribonectin of claim 1, wherein said polypeptide comprises the amino acid sequence of residues 200-1263, inclusive, of SEQ ID NO:1.

28. The tribonectin of claim 1, wherein said polypeptide lacks the amino acid sequence of residues 1-24, inclusive, of SEQ ID NO:1.

29. The tribonectin of claim 1, wherein said polypeptide lacks the amino acid sequence of residues 67-104, inclusive of SEQ ID NO:1.

10 30. An isolated nucleic acid molecule encoding a tribonectin.

31. The nucleic acid of claim 30, wherein said nucleic acid comprises the sequence of nucleotides 631-3453, inclusive, of SEQ ID NO:2.

32. A method of lubricating a mammalian joint, comprising contacting said joint with an isolated MSF gene product.

15 33. A method of lubricating a mammalian joint, comprising contacting said joint with the tribonectin of claim 1.

34. The method of claim 33, an articulating joint of a human.

35. The method of claim 33, an articulating joint of a dog.

36. The method of claim 33, an articulating joint of a horse.

20 37. The method of claim 33, wherein said joint is wherein said joint is wherein said joint is wherein said tribonectin is administered intra-articularly.

38. A method of lubricating a mammalian joint, comprising contacting said joint with the nucleic acid of claim 30.

25 SVB  
A10 39. A method of preventing or treating camptodactyl-arthritis-pericarditis syndrome in a mammal, comprising administering to said mammal a tribonectin.

40. A biocompatible composition comprising a tribonectin, wherein said composition is in a form suitable for the inhibition of tissue adhesion formation.

41. The composition of claim 40, wherein said tribonectin is in the form of a membrane, foam, gel, or fiber.

42. A method inhibiting adhesion formation between a first surface and a second surface in a mammal, said method comprising placing a tribonectin between said first and second surfaces in an amount sufficient to prevent adhesion of said surfaces in said mammal.

43. The method of claim 42, wherein said first surface and said second surface are both injured tissues of said mammal.

44. The method of claim 42, wherein said first or said second surface is an artificial device.

45. The method of claim 44, wherein said artificial device is an orthopedic implant.

46. The method of claim 42, wherein said tribonectin is in the form of a membrane, foam, gel, or fiber.

47. The method of claim 42, wherein said injury is due to a surgical incision.

48. The method of claim 42, wherein said injury is due to trauma.

49. The method of claim 42, wherein said first surface or said second surface is pericardial tissue.

50. A method for diagnosing an osteoarthritis or a predisposition thereto in a mammal, comprising measuring the amount of a megakaryocyte stimulating factor (MSF) or a fragment thereof in a biological sample derived from said mammal, wherein an increase in said amount compared to a control indicates that said mammal suffers from osteoarthritis or is predisposed to developing osteoarthritis.

51. The method of claim 50, wherein said biological sample is synovial fluid, blood, serum, or unite.

52. The method of claim 50, wherein said MSF fragment comprises the amino acid sequence of SEQ ID NO:3.

53. The method of claim 50, wherein said MSF fragment comprises the amino acid sequence of SEQ ID NO:5.

54. The method of claim 50, wherein said MSF fragment comprises the amino acid sequence of SEQ ID NO:6.

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